



2007

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Napping patterns during the 2nd year of USMA 2007 Class

A preliminary analysis

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Objectives

In support of a four-year longitudinal study of the Class of 2007, at United States Military Academy (USMA), West Point, NY, this work focuses on:

- Cadet napping patterns during the second year of their stay at the Academy
- Napping effect on daily sleep
- Frequency of napping versus gender, and seasonality issues.

Methods

A stratified sample of 80 cadets from USMA class of 2007 was selected to wear wrist activity monitors (WAMs). Evaluation of cadets' rest-activity time periods was conducted through wrist-worn omni-directional piezoelectric accelerometers (Actigraph; Respironics, Inc. and its affiliates). Analysis was conducted with the Actiware version 5.01.0007 software. There were two 30-day data collection periods, one from early-October 2004 through early-November 2004 (AY 2005-1), and one from early-April 2005 through early-May 2005 (AY 2005-2). Cadets who chose to stop participating in the study (drop-outs) were replaced by other screened, matching demographically, Class 2007 cadets. While wearing the WAMs the cadets were also asked to fill out a paper sleep log.

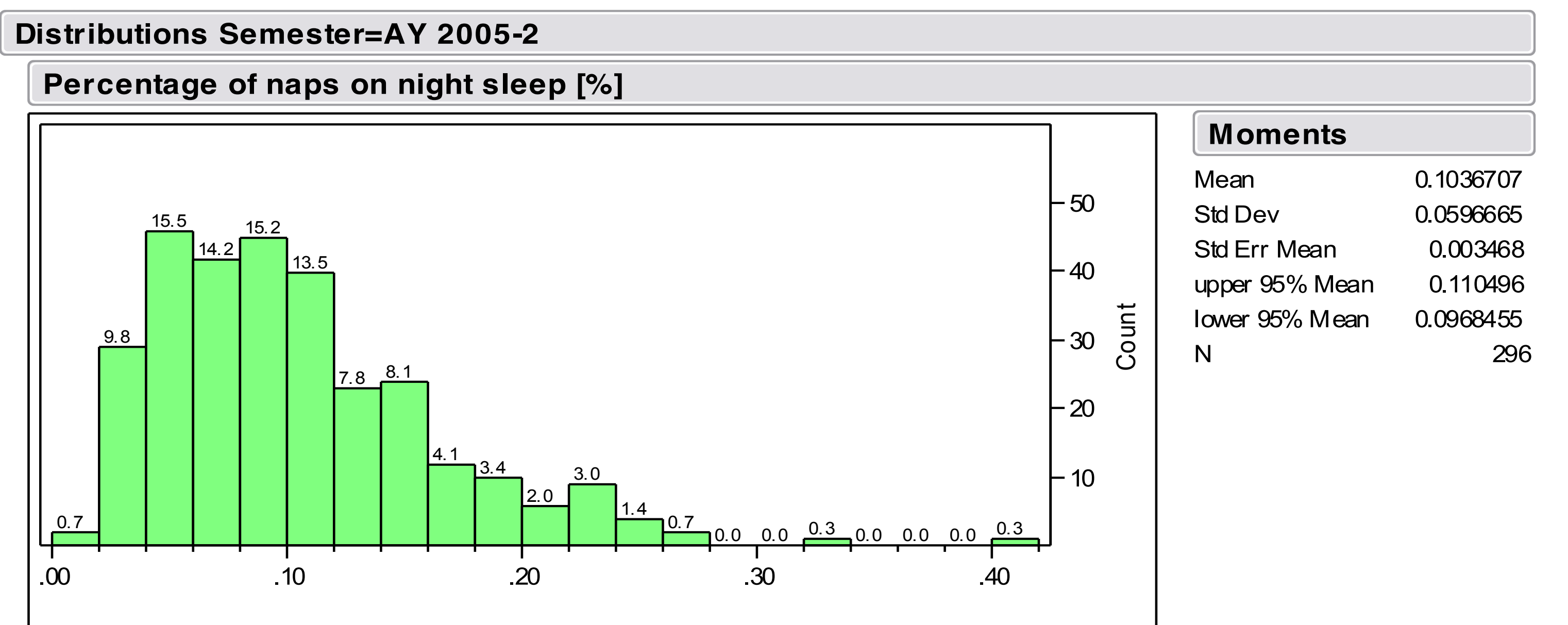
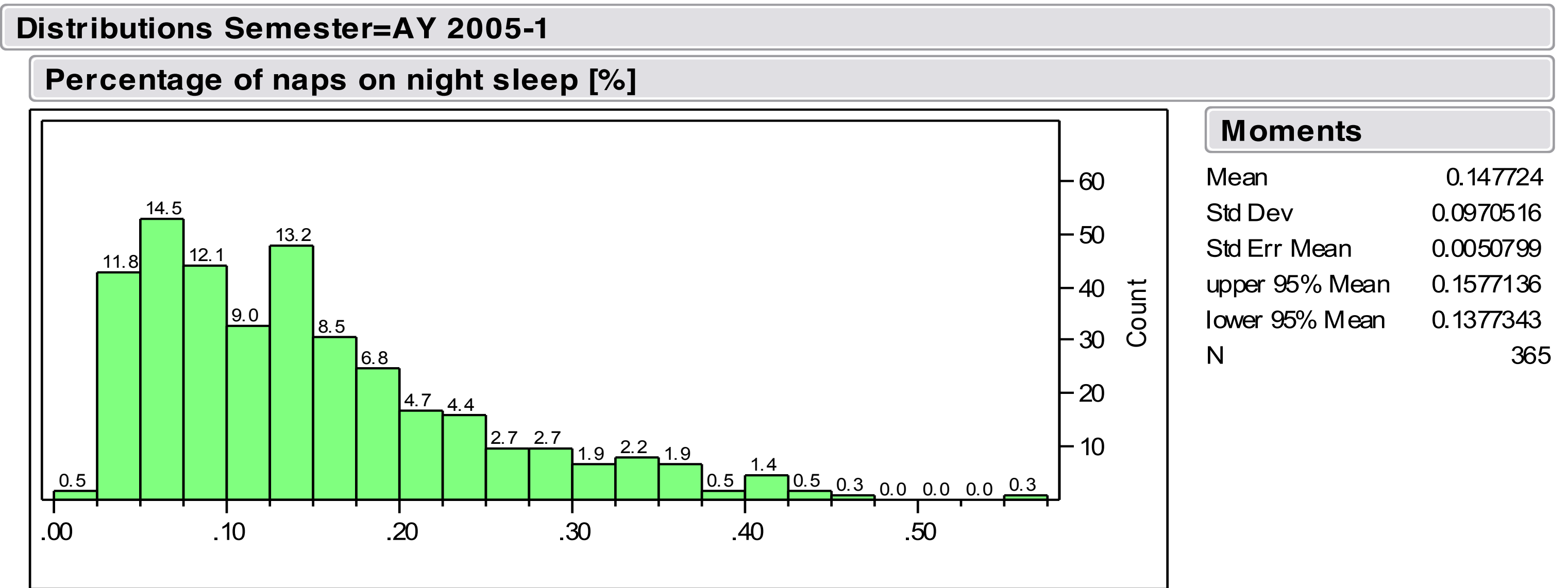
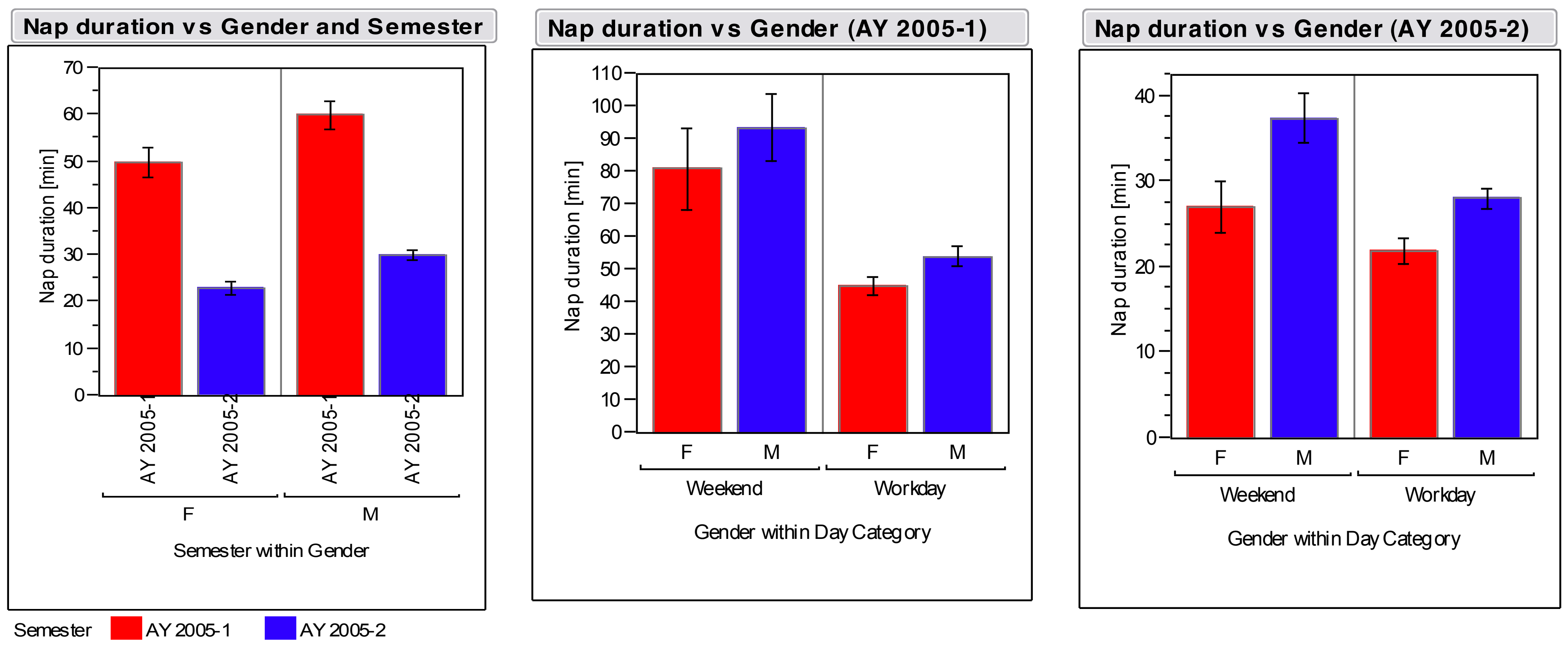
Preliminary Findings

- Cadets face a chronic sleep deprivation
- Only partial sleep amelioration during weekends
- The percentage of nappers reached 68%-75% of participant cadets
- Significant part of naps occur from 07:30 till 11:45 in-between lessons
- Napping at USMA not related to amount of major night sleep episode
- USMA napping of a compensatory nature
- Nap duration was found larger between 13:00 and 15:00 (near circadian local minima) than 09:00 and 11:00 (near morning circadian maxima) (Morning: mean=26 min, Afternoon: mean=36 min, $p < 0.001$)
- More, sort naps during schooldays, and less, longer naps in weekends
- Days with more than 2 naps per participant: Fall: 2.0% of all days, Spring: 4 .5% of all days

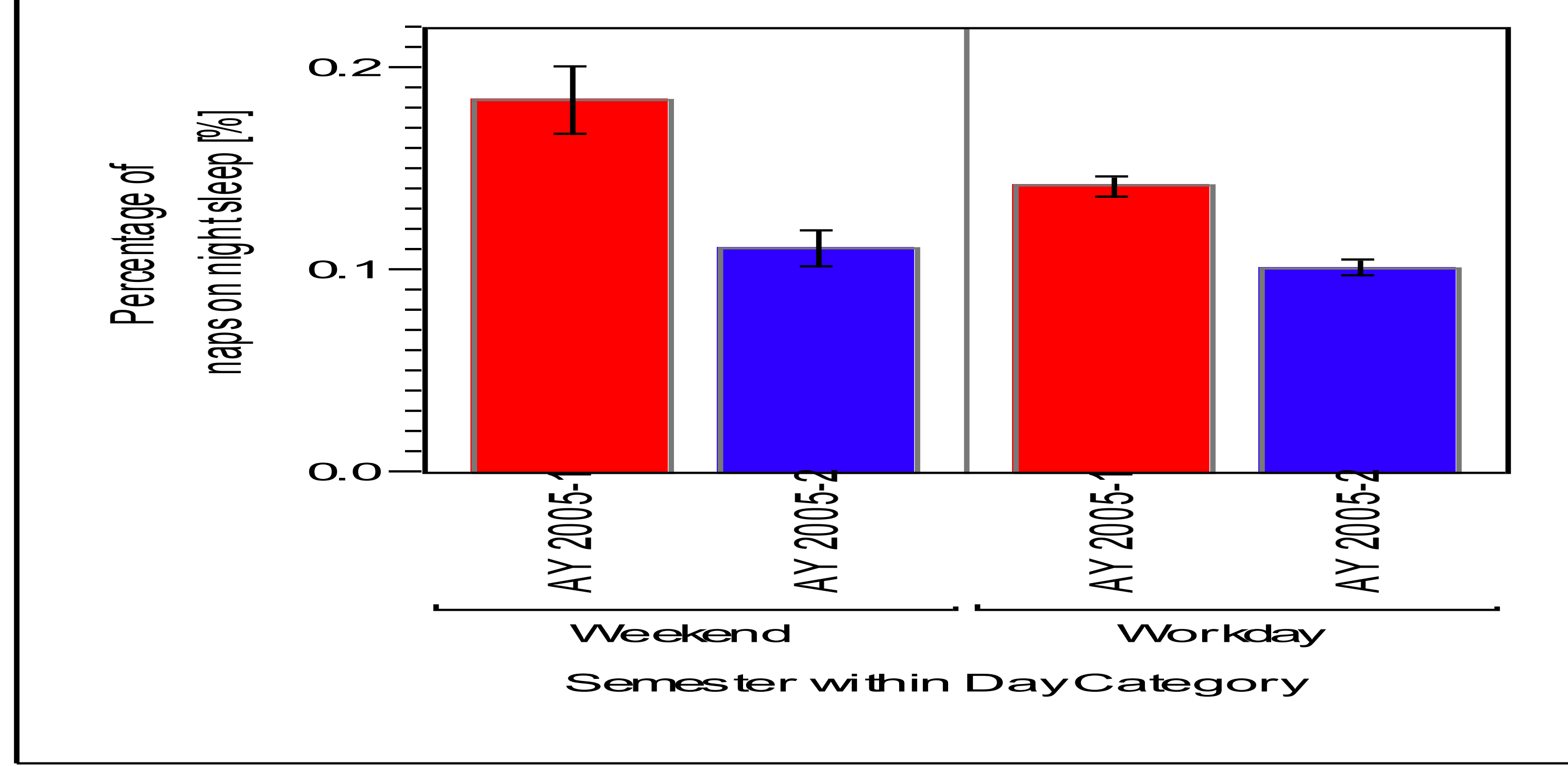
Mean actual night sleep

Data collection period	School Night	Weekend Night	Combined
AY 2005-1	5h 13m s.d.=0h 59m	6h 32m s.d.=1h 48m	5h 32m s.d.=1h 20m
AY 2005-2	5h 09m s.d.=0h 51m	6h 15m s.d.=1h 38m	5h 24m s.d.=1h 12m

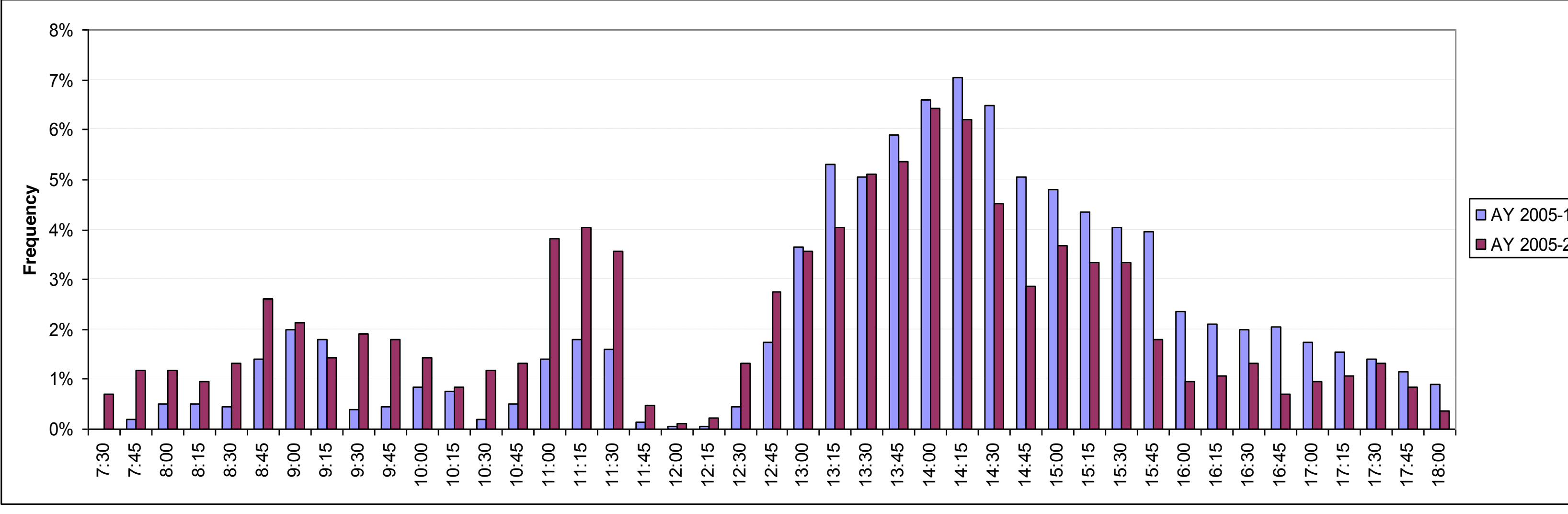
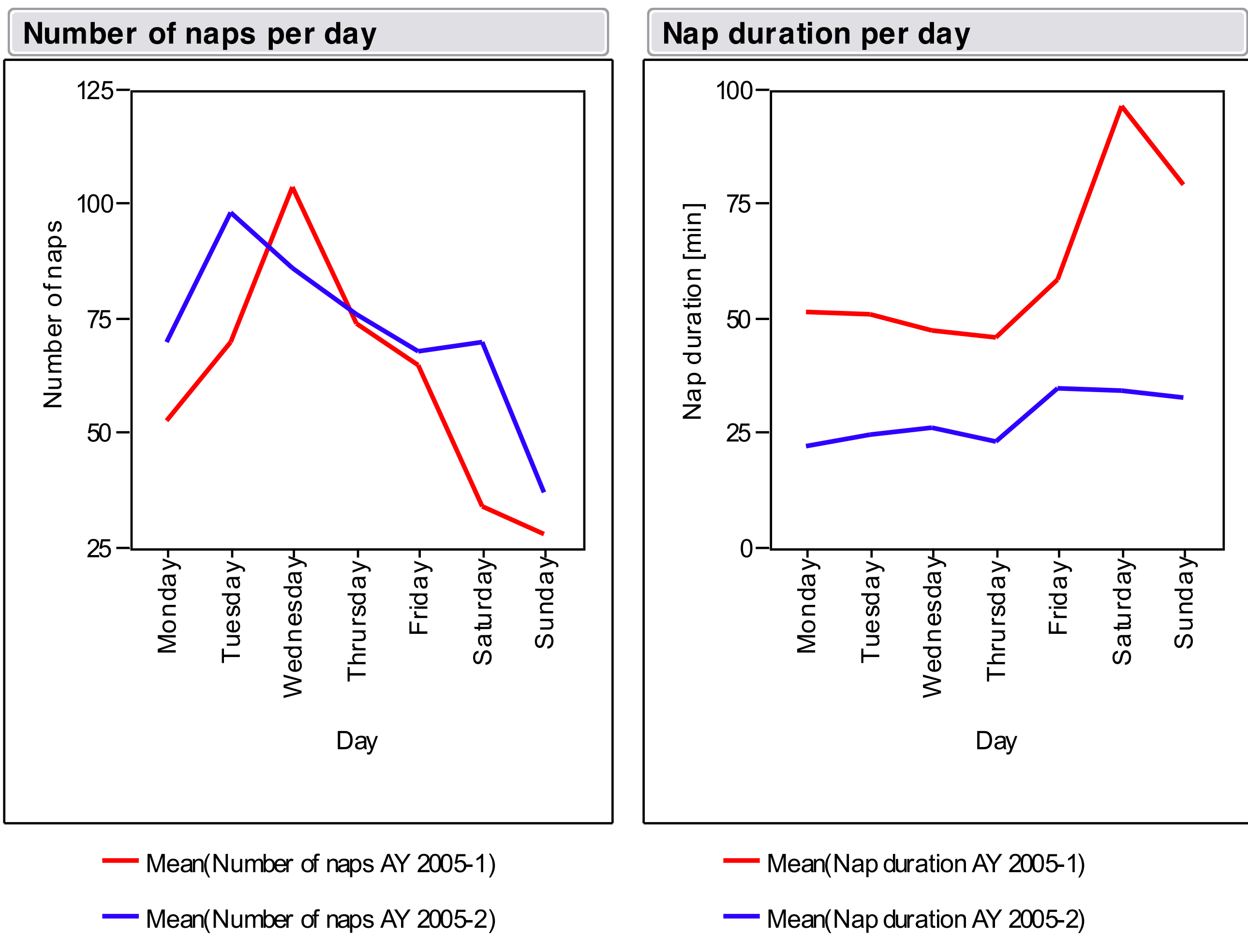
Nap duration vs Semester, Gender and Day Category



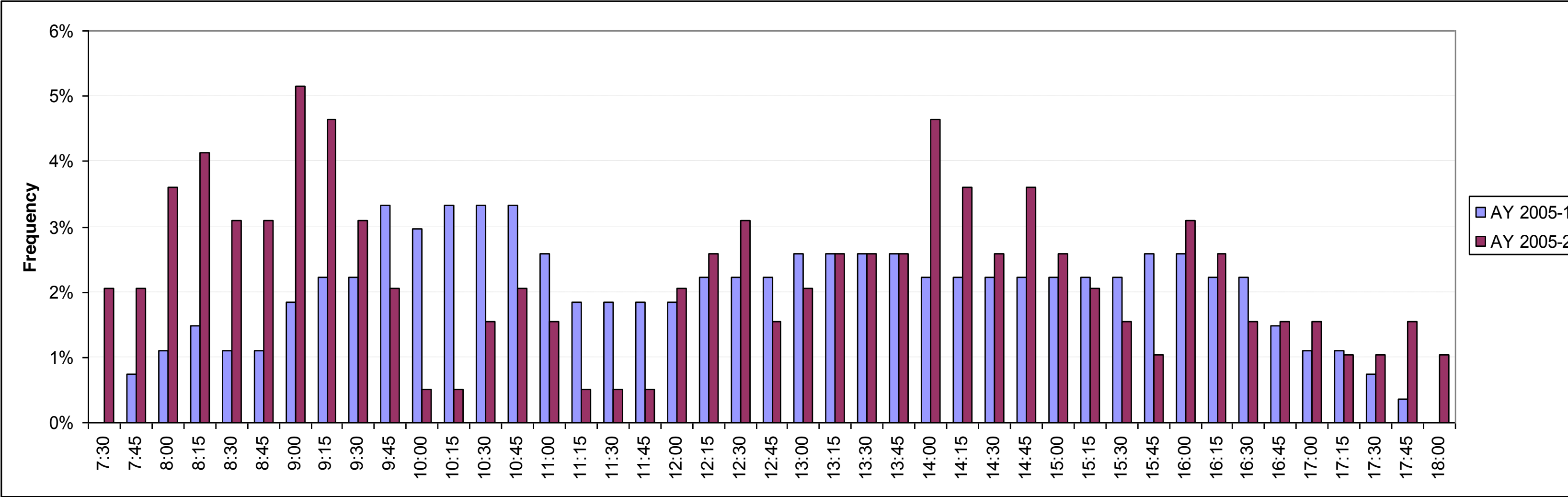
Sleep increase due to napping



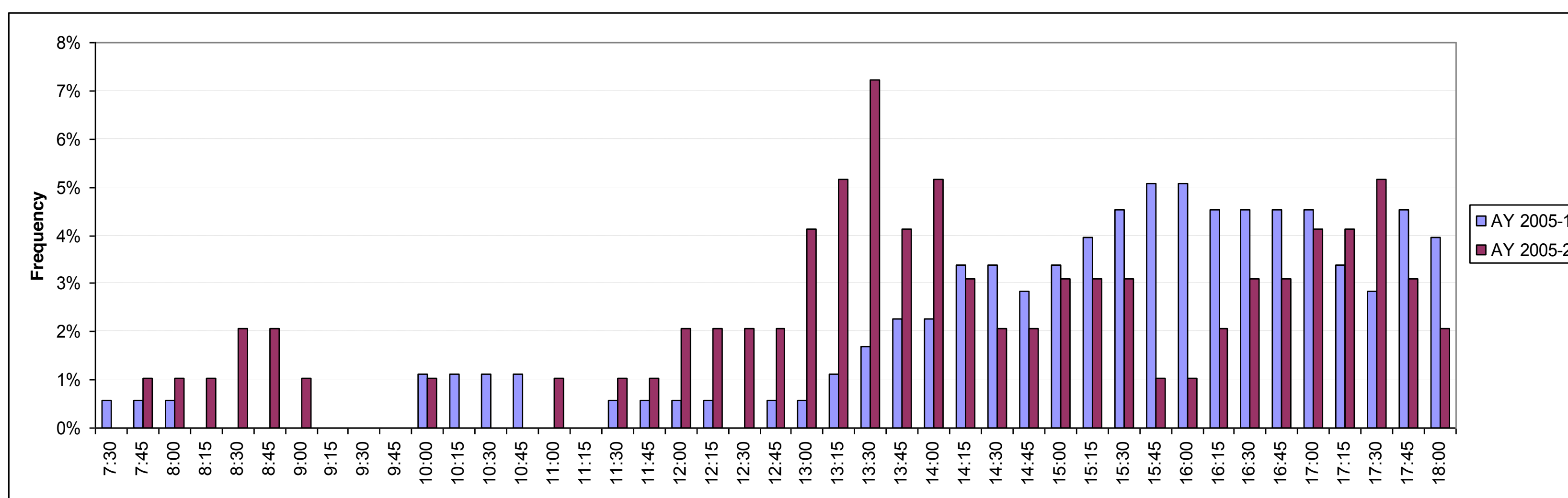
Nap analysis vs day of the week



Frequency of 15-minute napping intervals during schooldays



Frequency of 15-minute napping intervals during Saturdays



Frequency of 15-minute napping intervals during Sundays